REMARKS

Applicants thank the Examiner for the thorough examination of the application.

Claims 1, 3-10, 12, 13, 15-18 and 21-24 are pending in this application. Claims 1 and 10 are independent. Claims 1, 3, 5, 6, 7, 8, 10, 12, 15, 17, and 21-24 are amended and claims 2, 11, 14, 19-20 and 25-28 are canceled. No new matter is involved. Support for the amendments to the claims is found throughout Applicants' originally filed disclosure including, for example, Figs. 4-7 and the portions of the specification directed thereto.

Reconsideration of the present application is respectfully requested.

Telephone Interviews

Applicants acknowledge with appreciation the courtesies extended by Examiner Rude during the telephone interviews conducted on January 2, 5, 9 and 16, 2007 between Examiner Rude and Applicants' below-named representative, Mr. Robert J. Webster. During those interviews, possible claim amendments were discussed to clearly patentably define over the applied art.

Specification Objections

The Office Action objects to the specification. The Office Action indicates that the language "applying a data signal to the pixel electrode" on page 6, lines 15 and 16 of the main body of Applicants' specification is somehow improper.

Applicants respectfully submit that the language objected to is completely proper to one of ordinary skill in the art. An active matrix liquid crystal display (AMLCD) has to display data provided to it, and the data is supplied to the AMLCD via a data line. The specification does not state that the data is provided to the pixel electrodes by a direct connection between a data line and a

pixel electrode, as the Examiner appears to believe. Moreover, as is well known in the art, capacitive coupling between a data line and a pixel electrode, sometimes referred to as crosstalk, may also exist in AMLCDs. One of ordinary skill in the art recognizes this and views Applicants' disclosure with this in mind.

Applicants fail to see anything unclear about, or otherwise wrong with, stating that "a storage capacitor 18 provided between the pixel electrode 14 and the gate line 4 at the previous stage plays a role to prevent a voltage variation in the pixel electrode 14 by charging a voltage in a period at which a gate high voltage is applied to the previous-stage gate line 4 and discharging the charged voltage in a period at which a data signal is applied to the pixel electrode 14," as is stated on page 6, lines 9-16.

One of ordinary skill in the art also realizes that the data signal is applied, in an active matrix LCD, via a drain electrode of an active matrix transistor, and that there is capacitive coupling of the data signal as well.

The Examiner notes that the pixel electrode is connected to the drain electrode of the TFT. Applicants agree and respectfully submit that one of ordinary skill in the art takes that fact into consideration in understanding the meaning of the language in issue.

Accordingly, Applicants respectfully submit that the language of the specification on page 6, in lines 15 and 16 is clear and proper, and that this objection should be withdrawn.

Rejection under 35 U.S.C. § 103(a)

Claims 1, 3, 5, 6, 8, 10, 12, 15, 17, 21-24 and 26-28 are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,429,909 to Kim et al. (Kim) in view of U.S. Patent No. 6,313,889 to Song et al (Song). This rejection is respectfully traversed.

Because the rejection is based on 35 U.S.C. § 103, what is in issue in such a rejection is "the invention as a whole," not just a few features of the claimed invention. Under 35 U.S.C. § 103, "[a] patent may not be obtained . . . if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains." The determination under section 103 is whether the claimed invention as a whole would have been obvious to a person of ordinary skill in the art at the time the invention was made. *See* In re O'Farrell, 853 F.2d 894, 902, 7 USPQ2d 1673, 1680 (Fed. Cir. 1988). In determining obviousness, the Examiner must explain what the differences between the claimed invention and the prior art are and provide objective factual evidence to support a conclusion that it would be obvious to one of ordinary skill in the art to achieve the claimed invention, which includes those missing features.

Furthermore, in rejecting claims under 35 U.S.C. § 103, it is incumbent on the Examiner to establish a factual basis to support the legal conclusion of obviousness. *See* In re Fine, 837 F.2d 1071, 1073, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). In so doing, the Examiner is expected to make the factual determinations set forth in Graham v. John Deere Co., 383 U.S. 1, 17, 148 USPQ 459, 467 (1966), and to provide a reason why one of ordinary skill in the pertinent art would have been led to modify the prior art or to combine prior art references to arrive at the claimed invention. Such reason must stem from some teaching, suggestion or implication in the prior art as a whole or knowledge generally available to one having ordinary skill in the art. Uniroyal Inc. v. F-Wiley Corp., 837 F.2d 1044, 1051, 5 USPQ2d 1434, 1438 (Fed. Cir. 1988), cert. denied, 488 U.S. 825 (1988); Ashland Oil, Inc. v. Delta Resins & Refractories, Inc., 776 F.2d 281, 293, 227 USPQ 657, 664 (Fed. Cir. 1985), cert. denied, 475 U.S. 1017 (1986); ACS Hospital Systems, Inc. v. Montefiore

Hospital, 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984). These showings by the Examiner are an essential part of complying with the burden of presenting a *prima facie* case of obviousness. Note, In re Oetiker, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992). The mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggested the desirability of the modification. In re Fritch, 972 F.2d 1260, 1266, 23 USPQ2d 1780, 1783-84 (Fed. Cir. 1992). To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be suggested or taught by the prior art. In re Royka, 490 F.2d 981, 180 USPQ 580 (CCPA 1970). All words in a claim must be considered in judging the patentability of that claim against the prior art. In re Wilson, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970).

Moreover, a showing of a suggestion, teaching, or motivation to combine the prior art references is an "essential evidentiary component of an obviousness holding." C.R. Bard, Inc. v. M3 Sys. Inc., 157 F.3d 1340, 1352, 48 USPQ2d 1225, 1232 (Fed. Cir. 1998). This showing must be clear and particular, and broad conclusory statements about the teaching of multiple references, standing alone, are not "evidence." *See* In re Dembiczak, 175 F.3d 994 at 1000, 50 USPQ2d 1614 at 1617 (Fed. Cir. 1999).

Initially, Applicants note that this rejection is moot with respect to claims 26-28, which have been canceled.

Applicants continue to traverse this rejection for the reasons presented in the amendment filed on September 25, 2006, which are incorporated herein by reference.

Nevertheless, in an attempt to expedite prosecution, Applicants have amended the claims under rejection to more clearly define over the applied art based on the telephone discussions with the Examiner.

For example, independent claim 1, as amended, positively recites a combination of features, including: (1) pixel electrodes; (2) data lines adjacent to each of two opposed sides of the pixel electrodes for applying data signals to the pixel electrodes via thin film transistors on the substrate; (3) gate lines, disposed substantially perpendicular to said data lines for applying gate signals to the thin film transistors; gate dummy patterns parallel to said data lines adjacent to each of two opposed sides of the pixel electrodes and extending substantially the entire length of the pixel electrode portions adjacent and parallel to the data lines to overlap with at least one edge portion of said data lines and an edge portion of the pixel electrodes, and wherein the gate dummy patterns are physically located separate and apart from the gate lines.

Further, independent claim 10, as amended, positively recites a combination of features including: (1) pixel electrodes for driving liquid crystal cells; (2) data lines adjacent to each of two opposed sides of the pixel electrode for applying a data signal to said pixel electrode via thin film transistors on the substrate; (3) gate lines disposed substantially perpendicular to said data line for applying a gate signal to the thin film transistors; (4) gate dummy patterns parallel to said data lines adjacent to each of two opposed sides of the pixel electrodes and extending substantially the entire length of the pixel electrode portions adjacent and parallel to the data lines to overlap by about 0.5-1 μm with an edge portion of said data lines and an edge portion of said pixel electrodes, to thereby serve as a black matrix to shut off light leaked between said data lines and said pixel electrodes, and wherein the gate dummy patterns are physically located separate and apart from the gate lines.

During the aforementioned telephone interview held on January 16, 2006, Examiner Rude agreed that the claims, as now amended, appear to patentably define over the applied art.

Accordingly, the rejection should be withdrawn and independent claims 1 and 10 are patentable.

Moreover, because dependent claims 3, 5, 6, 8, 21 and 22 depend from claim 1, and claims 12, 15, 17, 23 and 24 depend from claim 10, claims 3, 5, 6, 8, 12, 15, 17 and 21-24 are not obvious at least for the reasons that claims 1 and 10 are not obvious, as stated above.

Reconsideration and withdrawal of this rejection of claims 1, 3, 5, 6, 8, 10, 12, 15, 17, 21-24 and 26-28 under 35 U.S.C. § 103(a) are respectfully requested.

Claim 25 stands rejected under 35 U.S.C. § 103(a) as unpatentable over Kim in view of Song, as applied in the rejection traversed above, and further in view of U.S. Patent 5,657,101 to Cheng. This rejection is respectfully traversed as moot because claim 25 has been canceled.

Reconsideration and withdrawal of this rejection of claim 25 under 35 U.S.C. § 103(a) are respectfully requested.

Claims 4, 7, 9, 13, 16 and 18 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Kim in view of Song, as applied in the rejections traversed above, and further in view of U.S. Patent 5,734,450 to Irie et al. (Irie). This rejection is respectfully traversed.

Applicants continue to traverse this rejection for the reasons presented in the amendment filed on September 25, 2006, which are incorporated herein by reference.

Nevertheless, in an attempt to expedite prosecution, Applicants have amended the claims under rejection to more clearly define over the applied art, and during the aforementioned telephone interview held on January 16, 2006, Examiner Rude agreed that the claims, as currently amended, appear to patentably define over the applied art.

Accordingly, this rejection of claims 4, 7, 9, 13, 16 and 18 under 35 U.S.C. § 103(a) should be withdrawn.

CONCLUSION

All of the stated grounds of objection and rejection have been properly traversed, accommodated, or rendered moot. It is believed that a full and complete response has been made to the outstanding Office Action, and that the present application is in condition for allowance.

However, if there are any outstanding issues, the Examiner is invited to telephone Robert J. Webster (Reg. No. 46,472) at (703) 205-8000 in an effort to expedite prosecution.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or to credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17, particularly extension of time fees.

Dated: March 13, 2007

Respectfully submitted,

BIRCH, STEWART, KOLASCH & BIRCH, LLP

By: Esther Chong

Esther H. Chong
Reg. No. 40,953
BIRCH, STEWART, KOLASCH & BIRCH, LLP
8110 Gatehouse Road
Suite 100 East
P.O. Box 747
Falls Church, VA 22040-0747
(703) 205-8000
Attorney for Applicant

EHC/RJW/ec